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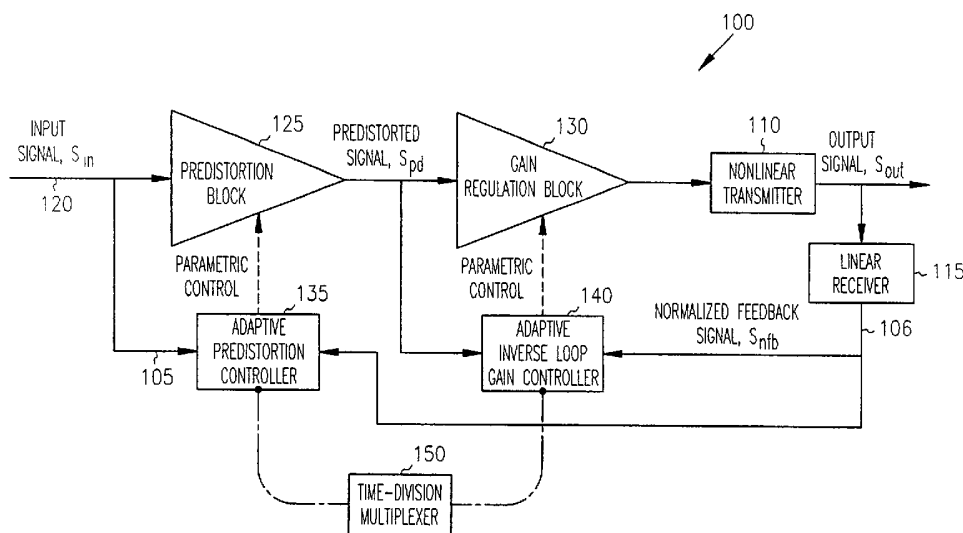
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ning of each regular issue of the PCT Gazette.

(54) Title: ADAPTIVE CONTROLLER FOR LINEARIZATION OF TRANSMITTER



(57) Abstract: An adaptive controller for linearization of transmitters using predistortion of the input signal has reduced sensitivity to impairments such as gain variation, phase noise or modulation/demodulation frequency instability by linearizing an adaptively normalized gain provided through a separate estimation and cancellation of linear gain variations. Values of a nonlinear and a linear gain blocks, cascaded with the linearized transmitter and called respectively a predistortion block and a gain regulation block, are independently adjusted by two different adaptive controllers. In one embodiment, four banks of real gain elements compose the predistortion block and realize an arbitrary step-wise approximation of a generalized 2x2 transmit gain matrix of nonlinear functions. In a further embodiment cancellation of a DC level bias multi-channel impairment is provided by an adaptively adjusted signal adder inserted in the transmit chain between the predistortion block and the linearized transmitter.

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

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IPC 7 H04L H03F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/022532 A1 (DOLMAN GRAHAM AINSLEY) 20 September 2001 (2001-09-20) abstract paragraph '0001! paragraph '0007! paragraph '0044! - paragraph '0046! paragraph '0048!	1-4, 25, 27
A	US 5 740 520 A (CYZE BARUCH ET AL) 14 April 1998 (1998-04-14) column 1, line 20 - line 55 ----- -/--	1, 25, 28

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	<p>FAULKNER M ET AL: "Amplifier linearisation using RF feedback and feedforward techniques" VEHICULAR TECHNOLOGY CONFERENCE, 1995 IEEE 45TH CHICAGO, IL, USA 25-28 JULY 1995, NEW YORK, NY, USA, IEEE, US, 25 July 1995 (1995-07-25), pages 525-529, XP010166998 ISBN: 0-7803-2742-X page 525, right-hand column, paragraph 3 - page 526, right-hand column, paragraph 2 page 528, left-hand column, paragraph 2 figure 4</p> <p>-----</p>	1,25,28

# INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2001022532 A1	20-09-2001	CA 2329100 A1 EP 1111868 A2	21-06-2001 27-06-2001
US 5740520 A	14-04-1998	NONE	